

ECHO CANCELLER WITH REDUCED REQUIREMENT FOR PROCESSING POWER ABSTRACT OF THE DISCLOSURE

An echo canceller processing echo, noise and near end talk in a narrower, but still intelligible, frequency band for reducing required processing power and complexity. In a preferred embodiment of the present invention, an input audio signal of captured sound in an audio communication system is decimated and then divided into a number of sub bands by an analyze filter. Each sub band is processed as in background audio echo cancelling by subtracting the signal with an echo estimate from a model of the acoustic signal in the respective sub band, except from that the signal is also bypassed, adjusted by a filter and subtracted from the processed signal. The resulting signals are then recombined by a synthesize filter and interpolated to the original sampling rate and bandwidth. Finally, the output from the synthesize filter is added to the input audio signal, which has been delayed and adjusted by a filter. The filters are controlled by a control algorithm detecting the presence of near end sound, far end sound and noise, so that the filters, and consequently the high pass filter of the echo canceller, only pass high frequency (above low pass frequencies) when only near end sound is detected.